

Date: Monday, 07/04/2008 12:46:00 PM
 User: Linda Lacelle

Process Sheet

| | | | |
|----------------------------------|---------------------------------------|-------------------------|---------------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : BK117 SKIDTUBE ASSEMBLY |
| Job Number | : 38440 | | |
| Estimate Number | : 12899 | | |
| P.O. Number | : | Part Number | : D117762011 |
| This Issue | : 07/04/2008 | S.O. No. | : |
| Prsht Rev. | : NC | Drawing Number | : N/A |
| First Issue | : / / | Project Number | : N/A |
| Previous Run | : 33139 | Drawing Revision | : |
| | Type : LANDING GEAR | Material | : |
| Written By | : | Due Date | : 18/04/2008 |
| Checked & Approved By | : | Qty: | 1 Um: Each |
| Comment | : Est Rev:A 07.06.11 New Issue EC | | |

Additional Product

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|--|
| 1.0 | DC | DOCUMENT CONTROL |
| | | Comment: DOCUMENT CONTROL Photocopy bluefile & type labels per PPP-D135-751-011 CHG001 <i>D117-762-041</i> |
| 2.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
| | | Comment: PACKAGING RESOURCE #1 Pull from HAI: 1 x D117-762-041 B33139 |
| 3.0 | D117762041 | Replacement Skidtube |
| | | Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) b/n 33139 PARTS CHANGED FOR HAI: (FOR TRACEABILITY PURPOSES) 1 X D2965 B36033 1 X D3508-13 B36416 1 X D3508-3 B31196 1 X D3558-3 B29999 1 X D2971 B33221 1 X D3662-3 B37190 3 X D3662-1 B37189 |
| 4.0 | HAND FINISHING1 | HAND FINISHING RESOURCE #1 |
| | | Comment: HAND FINISHING RESOURCE #1 REMOVE FOLLOWING PARTS FROM SKID AND DISCARD: - ALL BOLTS AND WASHERS SECURING WEARPLATES <i>send down & repaint white per QST005</i> <i>M107550</i> |

POSITIVE RECALL
 01.07.10
 ITN-D117-762
 rev A

Pld → see last page

08-04-09

Date: Monday, 07/04/2008 12:46:00 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|
|---------|-----------------------|---------------|

- BOLTS AND WASHERS SECURING AFT CAP

ADD NEW HARDWARE TO REPLACE ABOVE
AS FOLLOWS:

28 X AN3C4A
28 X AN960C10L
2 X AN3-5A
2 X AN960JD10L

TO COMPLETE TUBE:

2 X ALS4-428-165
2 X AN4-4A
2 X AN960JD416L
2 X D3492-049
2 X D3492-051
6 X D3492-053

(X36) AL57-1032-130/M105855

1- D3508-11 / B 356415 (1-D3508-3)
1- D3558-11 / B 36419 (B 31196)
1- D3558-13 / B 36418
1- D3508-13 / B 36416
1- D3508-9 / B 36417
1- D3558-9 / B 36420
1- D3558-3 / B 29999
1- D29653 / B 29999

| | | |
|-----|--------|------|
| 5.0 | AN3C4A | BOLT |
|-----|--------|------|



Comment: Qty.: 28.0000 Each(s)/Unit Total: 28.0000 Each(s)
BOLT M107376 JJ

| | | |
|-----|-----------|--------|
| 6.0 | AN960C10L | washer |
|-----|-----------|--------|



Comment: Qty.: 28.0000 Each(s)/Unit Total: 28.0000 Each(s)
washer M107376 JJ

| | | |
|-----|-------|------|
| 7.0 | AN35A | Bolt |
|-----|-------|------|



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Bolt M100188 JJ

| | | |
|-----|------------|--------|
| 8.0 | AN960JD10L | Washer |
|-----|------------|--------|



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Washer M104885 JJ

| | | |
|-----|------------|---------|
| 9.0 | ALS4428165 | Inserts |
|-----|------------|---------|



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Inserts M6989 JJ 08-04-10 (K)

Date: Monday, 07/04/2008 12:46:01 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

AN44A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Bolt M10(29) 911

11.0

AN960JD416L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Washer M107008 912

12.0

D3492049

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37288 911

13.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37289 911

14.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY B37289 911

15.0

D3492053

PLUG ASSEMBLY



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)
PLUG ASSEMBLY B37390 911

PTO =>

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/04/11 (41)

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
pick packing kit:

15.1 wing with K

M 107385

~~28~~ 08-04-10 (X1)

Date: Monday, 07/04/2008 12:46:01 PM
User: Linda Lâcelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

D35121

WEARPLATE



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WEARPLATE

Batch: B37618

Lu 8/4/18

19.0

AN960C10L

washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: M167321

B

20.0

AN3C4A

BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

BOLT

BATCH: M167376

B

21.0

AN451A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

BATCH: M16662

B

22.0

D2972

Bushing



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bushing

BATCH: B14103

Lu

23.0

MS21042L4

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Nut

BATCH: M166825

Lu 8/4/14

24.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS



08/07/13

Date: Monday, 07/04/2008 12:46:01 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38440

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location: _____

PPP Rev: _____

PPPT *PCV/3* *U*

26.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



POSITIVE RECALL

EFFECTIVE

RELEASED

AUTH

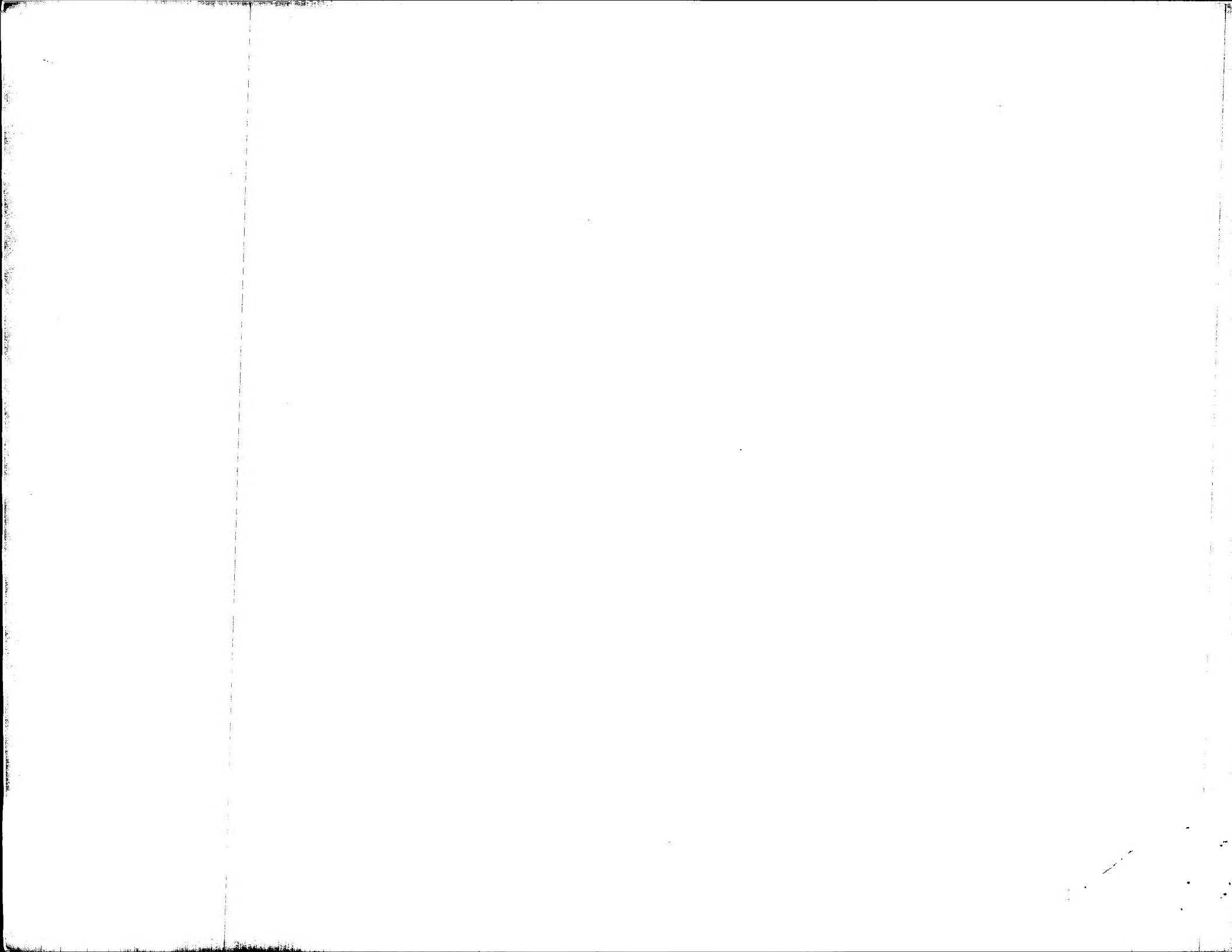
DATE

08.07.08

U

08.07.08

B 38440



REMOVE

AN3C4A

M103641

28

AN960C10L

M102473

28

AN3C4A

M103641

28

AN960C10L

M102473

~~28~~ 30

AN3CSA

M104118

28

Here @ Dart

AN9605D10L

M104385

2

REMOVE H00

AL54-428-165

B6989

2

AN3-5A

M100188

2

AN4-4A

M106918

2

AN9605D416L

M106785

2

Changyuan
ALL
AL
ALUMINUM
REF

ALUMINUM

M106330

A/R

AN3C4A

28

AN960C10L

28

AN3-5A

2

AN9605D10L

2

AL54-428-165

2

AN4-4A

2

AN9605D416L

2

D3492-049

2

- 051

2

- 053

2

~~NEW HESH POP NO 0113-262-011~~

2ND

DART

D117-762-011 (QTY 2) (B33139)

REMOVE

~~D352~~
D3512-1 B3 REMOVE
AN4-S1A M1
D2972 B1
MS21042L4 M1 ADD
D3512-1 B36180 (2)

⁷⁰
D3512-1 B36180

B3449
B36180

A

PICK
KIT

2

D117-762-041 (QTY 2) (B32910)

MS21042L4
AN304A
AN960C10L

ADD

REMOVE

D2965 B28959 * 2

D3508-13 ~~B36416~~ * 2
B33012

2ND { D3508-3 B33020 1
D3558-3 B33021 1

AN4-S1A M103648 2
D2972 B14103 4
MS21042L4 M110743 2

~~D2965~~ ~~B36033~~ * 2 1

~~D3508-13~~ ~~B36416~~ * 2 2

D3508-3 B31196 1

D3558-3 B29999 1

D2971 B33221 2 2 tube

D3662-3 B37190 2 "

D3662-1 B37189 6 "

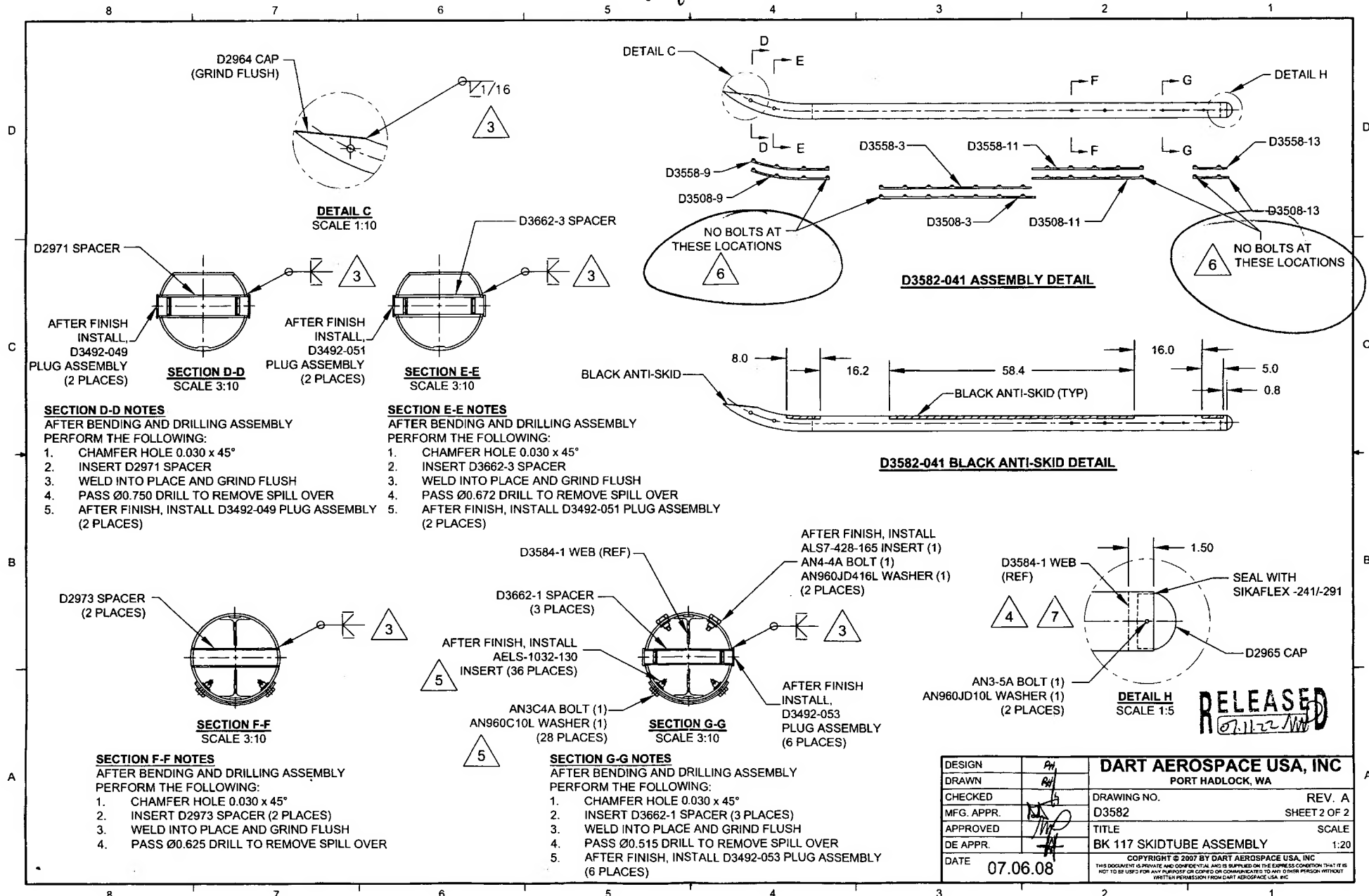
D3492-049 B37288 2 1 tube

D3492-051 B37289 2 1 tube

D3492-053 B37474 6 1 tube

AN4-S1A
D2972
MS21042L4

W/O 38440

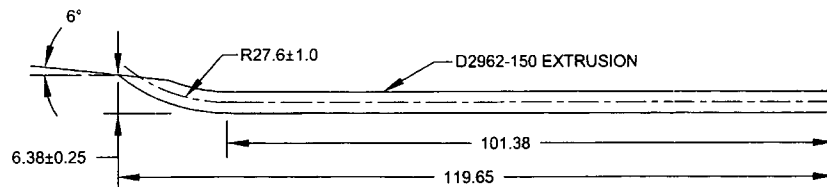


PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

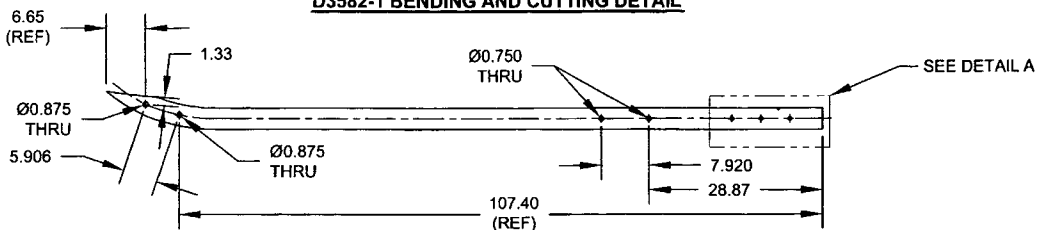
| Qty | Part Number | Description |
|-----|---------------|-------------------|
| X | D3582-041 | SKIDTUBE ASSEMBLY |
| 1 | D2962-150 | EXTRUSION |
| 1 | D2964 | CAP |
| 1 | D2965 | CAP |
| 1 | D2971 | CROSS BOLT SPACER |
| 2 | D2973 | CROSS BOLT SPACER |
| 2 | D3492-049 | PLUG ASSEMBLY |
| 2 | D3492-051 | PLUG ASSEMBLY |
| 6 | D3492-053 | PLUG ASSEMBLY |
| 1 | D3508-3 | WEARPLATE |
| 1 | D3508-9 | WEARPLATE |
| 1 | D3508-11 | WEARPLATE |
| 1 | D3508-13 | WEARPLATE |
| 1 | D3558-3 | GASKET |
| 1 | D3558-9 | GASKET |
| 1 | D3558-11 | GASKET |
| 1 | D3558-13 | GASKET |
| 1 | D3584-1 | WEB |
| 3 | D3662-1 | CROSS BOLT SPACER |
| 1 | D3662-3 | CROSS BOLT SPACER |
| 36 | AELS-1032-130 | INSERT |
| 2 | ALS7-428-165 | INSERT |
| 28 | AN3C4A | BOLT |
| 2 | AN3-5A | BOLT |
| 2 | AN4-4A | BOLT |
| 28 | AN960C10L | WASHER |
| 2 | AN960JD10L | WASHER |
| 2 | AN960JD416L | WASHER |

GENERAL NOTES:

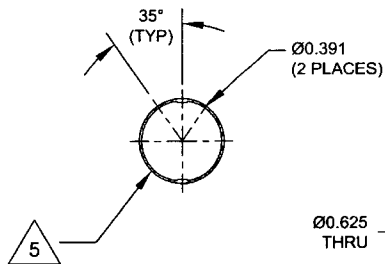
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004.
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB.
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4.



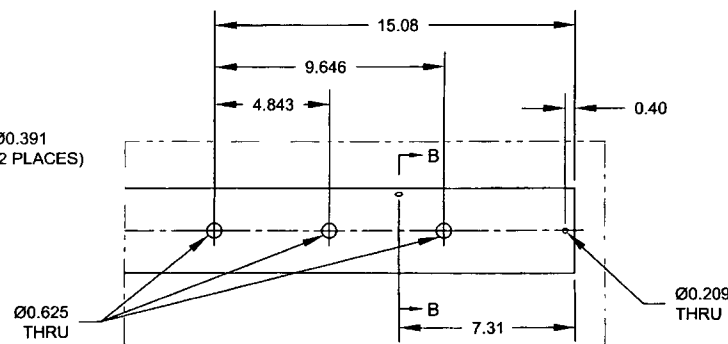
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5



DETAIL A
SCALE 1:5

RELEASED
07.11.22

| | | | |
|------------|-------------|----|----------|
| A | NEW ISSUE | PH | 07.06.08 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | SA | | |
| DRAWN | PAH | | |
| CHECKED | J | | |
| MFG. APPR. | W | | |
| APPROVED | W | | |
| DE APPR. | W | | |
| DATE | 07.06.08 | | |

| | |
|--|--------------|
| DART AEROSPACE USA, INC | REV. A |
| PORT HADLOCK, WA | SHEET 1 OF 2 |
| DRAWING NO. D3582 | SCALE 1:20 |
| TITLE BK 117 SKIDTUBE ASSEMBLY | |
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Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: D117-762-011 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: D Date: 28/07/08
 QA: N/C Closed: _____ Date: _____

| NCR: <u>38440</u> | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|-------------------|------------|--|-----------------------------|------------------------------------|---------------------------------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| <u>08/04/08</u> | <u>4/0</u> | Paint/powder coat was found to have many deformations on the under side of the skin take | <u>[Signature]</u> | Strip entire take with TA STRIP II | <u>M.H.</u> <u>08/04/08</u> | <u>[Signature]</u> | <u>[Signature]</u> | <u>[Signature]</u> |
| | | <u>M107550.</u> | <u>[Signature]</u> | <u>Re powder coat + comig</u> | <u>M.H.</u> <u>08/04/08</u> | <u>[Signature]</u> | <u>[Signature]</u> | <u>[Signature]</u> |
| | | <u>M107397-7</u> | | <u>WALK AS PER Q51005</u> | <u>[Signature]</u> <u>08/04/08</u> | <u>[Signature]</u> | | <u>[Signature]</u> |
| | | | | <u>Inspect QCS By QC.</u> | <u>[Signature]</u> <u>08/04/08</u> | <u>[Signature]</u> | | <u>[Signature]</u> |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

DART

DART AEROSPACE USA, INC.
110 Chimacum Creek Drive
Port Hadlock, WA 98339

Tel: 1 613 632 5200

Fax: 1 613 632 5246

e-mail: heli@dartaero.com<http://www.dartaero.com>

INSTALLATION INSTRUCTIONS

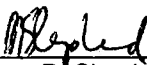
IIN-D117-762

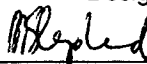
Skidtube Installations

EUROCOPTER BK 117 A-1/A-3/A-4/B-1/B-2/C-1 MODELS

38940
P24
06.07.10

Prepared By: 
P. Hum
Mechanical Designer

Checked By: 
D. Shepherd, P. Eng
Design Engineer

Released By: 
D. Shepherd, P. Eng
Design Engineer

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Revision: **A**

Date: 07.04.27

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

| Item | Qty -011 | Qty -041 | Part Number | Description |
|------|-------------|-------------|---------------------|--------------------------|
| | X | | D117-762-011 | SKIDTUBE INSTALLATION |
| | 1 | X | D117-762-041 | REPLACEMENT SKIDTUBE |
| 1 | | 1 | D3582-041 | SKIDTUBE ASSEMBLY |
| 2 | 2 | | **1121-51002 | SKID SHOE |
| 3 | 2 | | **1121-51102 | CLAMPING RING |
| 4 | 8 | | **LN9380M8X45 | HEXAGON BOLT |
| 5 | 8 | | **LN9023A8-1.4544.9 | LOCKING WASHER |
| 6 | 8 | | **LN9025-0815K | WASHER (OR LN9025-0815L) |
| 10 | | 1 | *D2965 | CAP |
| 11 | | 2 | ***AELS-1032-225 | INSERT |
| 12 | | 2 | *AN3C5A | BOLT |
| 13 | | 2 | *AN960C10L | WASHER |
| 20A | | 1 | *D3508-9 | WEARPLATE |
| 20B | | 1 | *D3558-9 | GASKET |
| 21A | | 1 | *D3508-3 | WEARPLATE |
| 21B | | 1 | *D3558-3 | GASKET |
| 22A | | 1 | *D3508-11 | WEARPLATE |
| 22B | | 1 | *D3558-11 | GASKET |
| 23A | | 1 | *D3508-13 | WEARPLATE |
| 23B | | 1 | *D3558-13 | GASKET |
| 24 | | 36 | *AELS-1032-130 | INSERT |
| 25 | 8 | 28 | *AN3C4A | BOLT |
| 26 | 8 | 28 | *AN960C10L | WASHER |
| 27 | 2 | | D3512-1 | WEARPLATE |
| 30 | | 2 | *AELS-1032-130 | INSERT |
| 31 | | 2 | *AN4-4A | BOLT |
| 32 | | 2 | *AN960JD416L | WASHER |
| 40 | | 2 | *D3492-049 | PLUG ASSEMBLY |
| 41 | | 2 | ***NAS1611-016 | O-RING |
| 42 | | 2 | *D3492-051 | PLUG ASSEMBLY |
| 43 | | 2 | ***NAS1611-015 | O-RING |
| 44 | | 6 | *D3492-053 | PLUG ASSEMBLY |
| 45 | | 6 | ***NAS1611-012 | O-RING |
| 50 | 2 | | AN4-51A | BOLT |
| 51 | 4 | | D2972 | BUSHING |
| 52 | 2 | | MS21042L4 | NUT (OR MS21042-4) |

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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Revision: A

Date: 07.04.27

38440
 PA
 08.07.10